

- 11 -

CLAIMS

1. A process for producing a formic ester, comprising reacting carbon monoxide with an alcohol to produce a formic ester, wherein the reaction is performed  
5 in the presence of an alkali metal-type catalyst and/or an alkaline earth metal-type catalyst.

2. A process for producing a methanol, comprising reacting carbon monoxide with an alcohol in the presence of an alkali metal-type catalyst and/or an alkaline earth  
10 metal-type catalyst to produce a formic ester, wherein a hydrogenolysis catalyst for formic ester and hydrogen are allowed to be present together in the reaction system to hydrogenate the produced formic ester and thereby obtain a methanol.

3. A process for producing a methanol, comprising reacting carbon monoxide with an alcohol in the presence of an alkali metal-type catalyst and/or an alkaline earth  
15 metal-type catalyst to produce a formic ester, separating the produced formic ester and hydrogenating the separated formic ester by allowing a hydrogenolysis catalyst and  
20 hydrogen to be present together, thereby obtaining a methanol.

4. A process for producing a methanol, comprising reacting an alcohol in the presence of an alkali metal-  
25 type catalyst and/or an alkaline earth metal-type catalyst, and a catalyst containing Cu simultaneously with Mn and/or Re to obtain a methanol from carbon monoxide and hydrogen.

5. A process for producing a formic ester, comprising reacting carbon monoxide with an alcohol,  
30 wherein the reaction is performed in the presence of a catalyst containing Cu simultaneously with Mn and/or Re.

6. The production process as claimed in any one of claims 1 through 4, wherein the alkali metal-type  
35 catalyst and the alkaline earth metal-type catalyst are a catalyst containing an alkali metal salt and a catalyst containing an alkaline earth metal salt, respectively.

- 12 -

7. The process for producing a methanol as claimed in claim 2 or 3, wherein the hydrogenolysis catalyst is a solid catalyst and the alkali metal-type catalyst and/or the alkaline earth metal-type catalyst is supported on said solid catalyst and used for the reaction.

8. The production process as claimed in any one of claims 1 through 5, wherein the alcohol is a primary alcohol.

9. A catalyst for producing a methanol, which is obtained by loading an alkali metal-type catalyst and/or an alkaline earth metal-type catalyst on a solid hydrogenolysis catalyst for formic ester.

10. A catalyst for producing a methanol, which is composed of an alkali metal-type catalyst and/or an alkaline earth metal-type catalyst, and a catalyst containing Cu simultaneously with Mn and/or Re.

11. A catalyst for producing a formic ester, comprising Cu simultaneously with Mn and/or Re.